

TeleSnifferTM

Installation and Operations Manual

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Product Number: 20020-002

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May 1990*

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1. The Many Uses of TeleSniffer

1

Chapter 1. The Many Uses of TeleSniffer

Every Sniffer analyzer includes TeleSniffer™, software that permits you to operate the Sniffer analyzer remotely from an IBM-compatible personal computer (PC). The remote PC can be located anywhere, across the room or across the country. The link is by telephone. You attach your own modem to the Sniffer analyzer's serial port and a corresponding modem at the remote PC.

When a PC is connected via TeleSniffer, it becomes a remote screen and keyboard for a Sniffer analyzer located somewhere else. The remote PC can see anything the Sniffer analyzer sees, select anything the analyzer's menus offer, and type anything the operator at analyzer's keyboard could type.

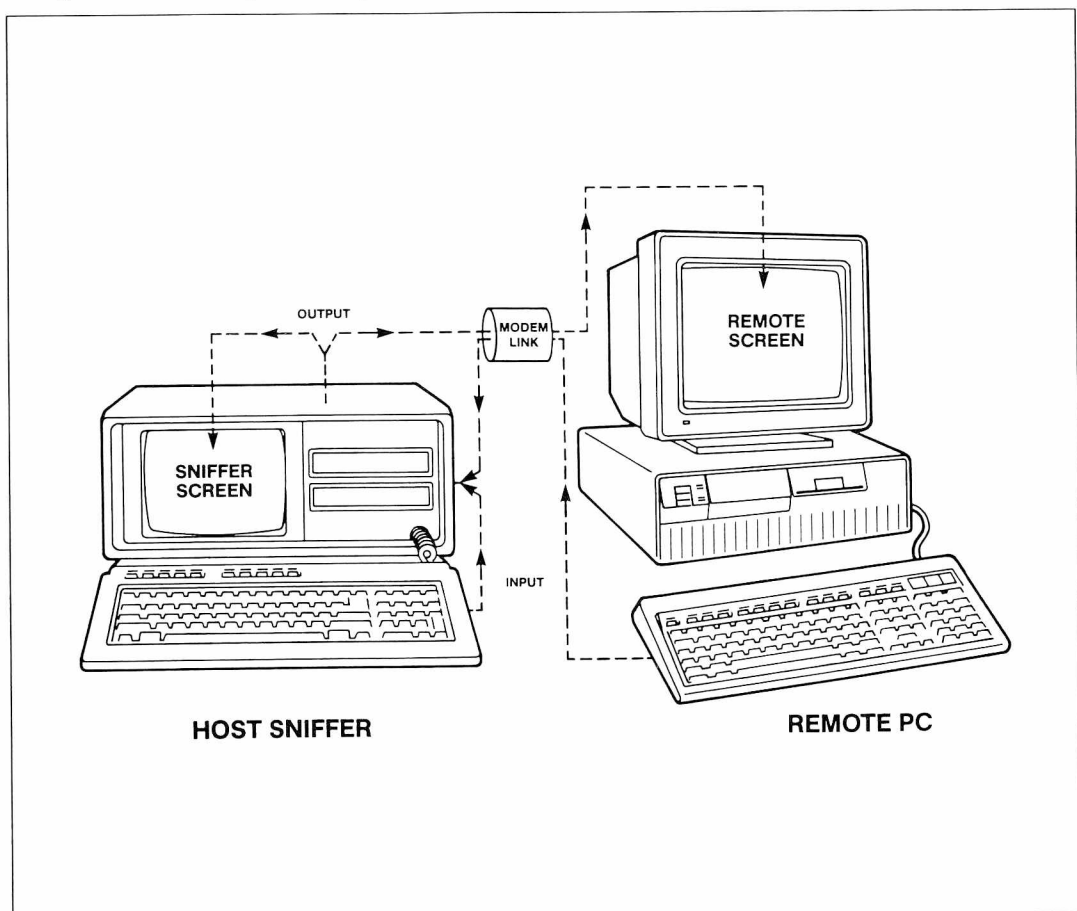


Figure 1. Roles of host (the Sniffer analyzer) and remote (any compatible PC) when using TeleSniffer to operate the analyzer remotely.

Some Examples

TeleSniffer permits communication between any two Sniffer analyzers or between any Sniffer analyzer and a PC to which you have copied the remote portion of the TeleSniffer software.¹ You can use the remote PC to:

- View the screen of a Sniffer analyzer located somewhere else.

For example, you can:

- Dial a Sniffer analyzer located on another network.
- See on your PC the same display that is on that analyzers screen.
- Dial in turn each of several different Sniffer analyzers, each on a different network at a different place.
- Control and operate the Sniffer analyzer.

The remote PC becomes, in effect, a terminal connected to the Sniffer analyzer. You aren't just watching what the Sniffer analyzer is doing but operating the analyzer, just as you would if you were seated in front of it. For example, you can:

- Make selections from the Sniffer analyzer's menus, just as you do where you're seated at the analyzer itself.
- Supply the name of a file (or any other required text).
- Chat with the Sniffer analyzer's operator.

While your PC is connected to the Sniffer analyzer, either you or the analyzer's operator can open a "chat" window in which text typed at one keyboard appears on the screen of the other machine. (The chat window temporarily replaces the Sniffer analyzer's usual display. It doesn't terminate the Sniffer analyzer's work but does suspend it while you converse.)

- Exchange messages.
- Pass instructions to the person at the Sniffer analyzer's location.

1

TeleSniffer is used under license from Meridian Technology, Inc. and incorporates some features of their product, Carbon Copy PLUS. However, TeleSniffer cannot be used to communicate with a machine running Carbon Copy PLUS.

- Transfer files in either direction.

One of the remote PC's options is to enter TeleSniffer's file transfer module (described later in the section headed "Transferring Files to and from the Host Sniffer").

There are several situations in which it's useful to exchange files between the Sniffer analyzer and a remote PC. For example, you can:

- Download (from Sniffer analyzer to PC) a printer file containing a report on the contents of the analyzer's capture buffer.
 - Download a file of captured frames. Because frames are stored in an internal analyzer format, you can't read them the way you would ASCII text. However, when you move them to a Sniffer analyzer, you can analyze them or play them back just as you could at the analyzer that captured them.
 - Upload (from PC to Sniffer analyzer) a file of names, perhaps a dictionary of symbolic names for station addresses that the analyzer can use while it interprets captured frames.
 - Upload a file of frames captured elsewhere so the Sniffer analyzer can analyze them. For example, you may collect files from several different Sniffer analyzers and upload them to a common analyzer for analysis.
- Receive maintenance from Network General.

You can arrange to have Network General dial your Sniffer analyzer and, thus, temporarily connect to your analyzer from a remote PC of theirs. That way they can easily check out a question you raise or a problem you report. As you demonstrate on your own machine, they see what you see. As they key in a possible response, you see what they do because it's happening at your Sniffer analyzer.

Using TeleSniffer's file-transfer facility, Network General can upload a patch or a revised version of the Sniffer software. It's loaded directly through the telephone link, without having to wait for shipments.

2. What It Takes to Run TeleSniffer

2

Chapter 2. What It Takes to Run TeleSniffer

Here's a list of the things you need in order to take advantage of TeleSniffer.

- A PC.

You supply your own PC to act as the remote station. A machine with a hard disk is nice but is not essential since TSRemote can be run from a floppy. (Since a Sniffer analyzer is itself PC-based, it's possible to use another Sniffer analyzer as the remote PC.)

- A modem link. You supply the connection between your remote PC and your Sniffer analyzer (or analyzers). You need:

- Access to telephone lines at each end.

You don't need a telephone handset, unless you also want to talk over the phone line. The TeleSniffer software can answer the line or dial outgoing calls directly.

- Two Hayes-compatible modems, one for the host Sniffer analyzer and one for the remote PC. They have to be capable of running at the same speed, preferably 2400 baud or faster.
- No additional software. The Sniffer analyzer already has the needed files. They're installed in two directories: C:\TELESNIF\HOST AND C:\TELESNIF\REMOTE. When you run the Sniffer analyzer as host, you use the files already installed in C:\TELESNIF\HOST.

When you operate a remote PC, you copy the files from the Sniffer analyzer's directory, C:\TELESNIF\REMOTE, to a similar directory on the remote PC. (Chapters which follow describe the setup procedure in more detail.)

How it Works: TeleSniffer's Main Modules

Each copy of TeleSniffer provides two key modules that operate together in complementary fashion, one on the host analyzer and the other on the remote PC. Each of them has an installation module that lets you set or review parameters that govern the way in which TSHOST and TSREMOTE interact with the equipment and with each other.

The principal modules are:

TSHOST

This is the program that runs on the host Sniffer analyzer. Once started, it remains resident, awaiting a call from a remote PC. TSHOST remains active in the

background while the Sniffer analyzer goes about its work of Sniffing. The installation module for TSHOST is called HOSTINST.

On the host Sniffer analyzer, you use HOSTINST to specify passwords and call back procedures by which the host can verify the identity of a remote caller. You can assign an access level to each password and can restrict the way in which the user who signed on with that password will see or will transfer files between host and remote.

tsremote

This is the program that runs on the remote PC. You use it to call the host analyzer and then to communicate with the Sniffer analyzer. Once the link is established, the remote PC's display shows whatever is on the screen of the host Sniffer analyzer. The installation module for TSREMOTE is called REMINST.

On the remote PC, you use REMINST to set up a directory of phone numbers to call and passwords to offer when the host Sniffer analyzer requests.

What TSHOST Does

You run TSHOST on the Sniffer analyzer that acts as host. The person operating the Sniffer analyzer must start TSHOST before the analyzer can accept a call from a remote PC.

If you expect your Sniffer analyzer to receive calls from a remote PC, you can invoke TSHOST in the Sniffer analyzer's file, AUTOEXEC.BAT; that way, TSHOST is automatically started every time you start the Sniffer analyzer, and the analyzer is always ready to accept a call.

Alternatively, the person operating the Sniffer analyzer can select TeleSniffer from the analyzer's **main selection menu** and thus start TSHOST only when the need arises.

Once started, TSHOST immediately terminates but stays resident. It reserves about 46,000 bytes of main memory.² The Sniffer analyzer goes on about its usual work. TSHOST remains dormant until the analyzer receives either a call from a remote PC or a prearranged escape signal from the keyboard.

2

If you have extensive protocol interpreters, the space reserved for TSHOST may reduce the space available for capture buffers, but that does not otherwise affect the Sniffer analyzer's operation.

When a call comes in, TSHOST answers it. Provided the caller satisfies TSHOST's security check, TSHOST copies the display that's on the Sniffer analyzer's screen to the screen of the remote PC. At the remote PC, TSREMOTE displays the screen that TSHOST has sent it. Both machines have the same display.

TSHOST accepts keystrokes typed at the remote PC as input to the Sniffer analyzer, just as though you typed them at the analyzer's keyboard (see Figure 1).

These extra input/output activities of TSHOST don't stop what the Sniffer analyzer was doing previously—unless, of course, the arriving keystrokes spell out instructions that tell the analyzer to do so.

When the call comes in, the remote user sees the Sniffer's displays on the remote PC's screen if the Sniffer software is already running on the host machine. It's as though the user at the remote PC had stepped up to the controls of a Sniffer already at work.

What TSREMOTE Does

TSREMOTE is the module you use on the remote PC.

(Since a Sniffer analyzer is itself a PC, any Sniffer analyzer can play either role. While it's acting as host, an analyzer can go on Sniffing. However, while it's acting as remote, it can't Sniff at the same time.)

When you start TSREMOTE, it displays a screen on which you indicate the name or telephone number of the Sniffer network analyzer you want to call. When your call is successful, TSREMOTE displays on your local PC the same image that's on the host analyzer's screen. What you type at your local PC keyboard is transmitted to the host analyzer.

You continue in this fashion, with your local PC's screen mirroring the screen of the host analyzer, until either you or the operator at the host analyzer can press an escape sequence.³ That signal causes a TeleSniffer control screen to appear. It appears concurrently on the screens of the two machines, both host and remote. From there, you can elect other activities that TeleSniffer supports, or you can terminate the link.

When you terminate the link, the remote PC returns to DOS. The host Sniffer analyzer goes on with what it was doing (and perhaps has continued to do) before the call came in. Since TSHOST remains resident, the analyzer is again ready to accept a call.

3

The escape sequence is ordinarily <Alt><Right-Shift>. However, HOSTINST and REMINST permit either machine to make its own escape sequence something else.

How Host and Remote Screens Keep in Synchron

Once communication has been established, TeleSniffer tries to assure that the two machines (host analyzer and remote PC) see identical displays. In general, information that appears on the host analyzer's screen also appears on the screen of the remote PC. Even the TeleSniffer control menus appear on both screens, not just the screen of the machine that invoked them.

Anything typed at the remote PC's keyboard becomes input to the host analyzer. (Anything typed at the host Sniffer analyzer's keyboard is also input to the host Sniffer analyzer.) It's as though the host is a single processor, but with two screens and two keyboards (see Figure 1).

There are some limitations on this paired display.

The main one is speed. TSHOST transmits only the characters that have changed since the last display, without trying to retransmit the entire screen. The order in which characters are painted on the remote screen is not necessarily the same as the order in which they're painted at the host analyzer. When the two machines are linked, there's a noticeable time required to transfer data between them. Managing the joint displays of a host analyzer coupled with a remote PC necessarily imposes burdens that are not involved when a Sniffer analyzer operates alone. Not only must data be transmitted in both directions between the two machines, but the Sniffer analyzer must also devote part of its time to managing that transmission.

As long as the speed of the serial interface is the limiting factor on the joint performance of host and remote, increasing the speed of transmission (the baud rate) improves performance. But beyond some optimum speed, a higher rate simply means that transmission must pause to wait for some other critical resource, either in the host Sniffer analyzer or the remote PC. For example, when the remote machine is a 6Mhz IBM PC, 2400 baud seems distinctly better than 1200. But speeds much higher than that add little; the maximum supported speed (19.2kb) yields a remote display that is more obviously jerky than the display you get with more moderate speeds. File transfers benefit more directly from increased line speed.

Synchronization Options

There are going to be times when the remote PC is unable to match the speed with which the Sniffer analyzer changes its display. A few of the rapid changes in the Sniffer analyzer's normal displays are essentially cosmetic; for example, the "zoom" effect of an opening window or the rapid succession of small changes that

produce the illusion of smooth scrolling between menu panels. Since such visual effects are not essential, the Sniffer analyzer omits them when acting as a host.⁴

Even omitting inessential visual effects, a remote PC still can't flash up a screenful of data as fast as a stand-alone Sniffer analyzer could. When the remote PC falls behind, there are two main alternatives: either you force the host to slow down, or you permit the remote PC to skip some of the host's output. TeleSniffer's default is to synchronize: that is, to force the host analyzer to slow down, making sure that it doesn't get too far ahead of the remote PC. An option in the **main TeleSniffer menu, data link maintenance**, permits you to disable synchronization.

When you disable synchronization, you permit the host analyzer to get ahead of the remote copy. Rather than a continuously-updated display, the remote PC shows a succession of snapshots. "Data Link Maintenance" (below) describes how to set this parameter, and suggests when you'll want to keep synchronization as it is and when you'll be better off disabling it.

4

You can also suppress them when the Sniffer analyzer is operating alone by electing the `noscroll` option as a command line parameter when you start the analyzer.

3. Setting Up the Host Sniffer

3

Chapter 3. Setting Up the Host Sniffer

This chapter describes what you have to do to install the hardware and software that a Sniffer analyzer will need so that it can serve as host to a remote PC.

Connecting the Modem to the Serial Port

You need a Hayes external modem of the same speed as the modem at the remote PC. You'll probably need to plug the modem's power supply cable to a standard power outlet. Attach the modem's data port to the Sniffer's serial port (which is configured as COM1).

To connect the modem, you need a cable with a female DB-9 connector to match the male DB-9 installed on the card in slot 1. (You can see it in Figure 3-1 of The Sniffer Network Operations Manual.) On the modem itself, there's usually a DB-25 connector.

Cable Connections to the Sniffer's Serial Port

The Sniffer analyzer's COM1 serial port terminates in a male DB-9 connector. Modems are usually equipped with a DB-25 connector. The DB-9 configuration on the Sniffer analyzer the same as that used on the IBM PC-AT, so the modem may be connected by a standard "AT-to-modem" cable. Its pin connections are shown in Figure 2.

	Sniffer DB-9		Modem DB-25
Carrier Detect	DCD	1	8
Receivata	RCV	2	3
Transmit Data	XMIT	3	2
Data Terminal Ready	DTR	4	20
Signal Ground	GND	5	7
Data Set Ready	DSR	6	6
Request to Send	RTS	7	4
Clear to Send	CTS	8	5
Ring Indicator	RI	9	22

Figure 2. Connections from Sniffer DB-9 to modem DB-25.

Install Software for the Host Sniffer Analyzer

It isn't necessary to install the TeleSniffer software; it's already installed in the Sniffer analyzer's hard disk directory, C:\TELESNIF\HOST.

Prepare Software for the Remote PC

The software you'll need for the remote PC is also installed on the Sniffer analyzer's hard disk. It's in the directory, C:\TELESNIF\REMOTE. You should copy all the files in C:\TELESNIF\REMOTE to a diskette. You'll need this diskette in order to install TeleSniffer on the remote PC.

Configure TeleSniffer on the Host Sniffer Analyzer

Before you can run TSHOST on the host Sniffer analyzer, you have to create a configuration file. It contains the values of various parameters that TSHOST needs when it runs. To create or revise the configuration file, you run a program called HOSTINST. When the existing configuration file is appropriate, you don't have to

run HOSTINST again. However, you must set the configuration before you start TSHOST for the first time.⁵

Among other things, running HOSTINST permits you to tell TeleSniffer:

- The type of modem you've installed and other characteristics of your communication link. It's important that the two modems match, i.e., use the same speed, the same data encoding parameters, and so on.
- The passwords you'll require of remote PCs that call the host analyzer, and the powers you grant to each caller.
- The startup keystrokes for bringing up the TeleSniffer control screen.
- The enablement of the call back security feature.

HOSTINST'S Main Menu

When you run HOSTINST, it starts by putting up its main menu (Figure 3). Here you can set the values of several parameters. Before you leave **HOSTINST's main menu**, you should elicit in turn each of its two submenus, labeled 1 and 3.⁶

The available submenus are:

1 -- Optional configuration parameters. Settings for the machine on which you are running HostInst.

3 -- Password table. The list of passwords, the access levels to TSDOS, and the call back numbers the host will use to interact with remote callers.

5

It's possible to run HOSTINST again after you've started TSHOST, but the changes won't take effect until the next time you reset the host machine.

6

HOSTINST and REMINST start with the same main menu. Between them they have three submenus; 1 and 3 appear in the host version, and 1 and 2 in the remote version.

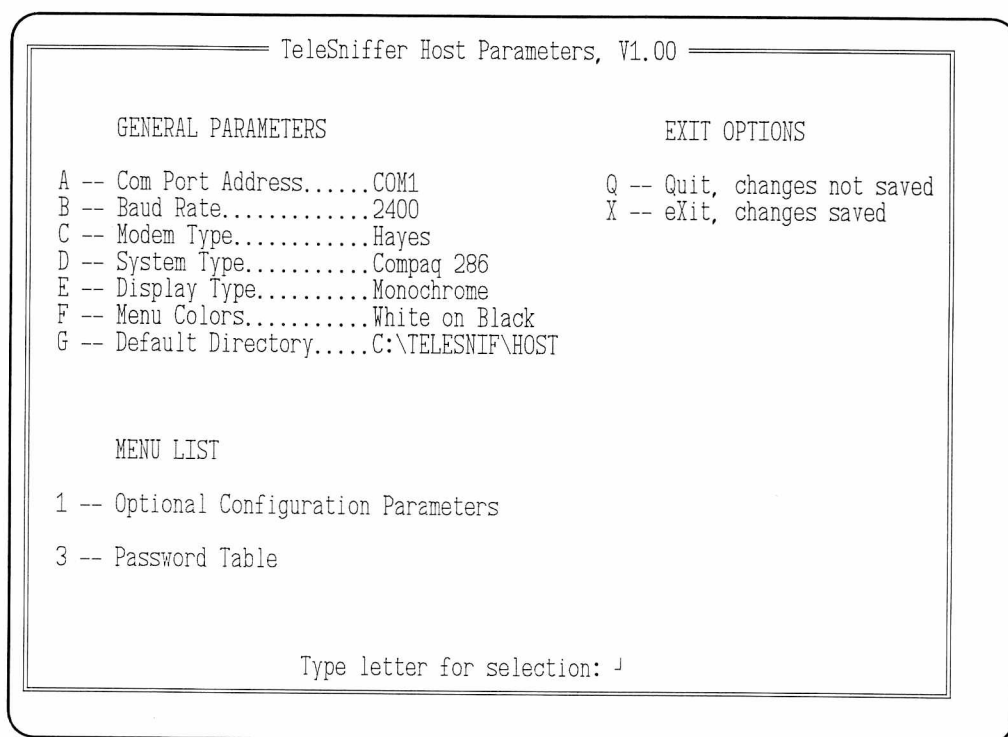


Figure 3. HOSTINST'S main menu.

Choices in HOSTINST'S Main Menu

In setting a value for each of the options **A** to **G**, you're telling TeleSniffer how the host (the machine you are now using) is equipped. Options **B** and **C**, the baud rate and the modem type, must be compatible with the equipment and options of the other machine.

The options **A** to **F** are multiple choice items. Each time you press one of the letters **A**, **B**, **C**, **D**, **E**, or **F**, the display shows another possible value for that item. Pressing a letter repeatedly thus steps you through all the possible settings. Keep pressing until you see the appropriate one.

The available menu options are:

A -- Com port address. Determine where the communications port is configured. On a host analyzer, it is always COM1.

B -- Baud Rate. Specify the speed with which TeleSniffer should supply data to the serial port. When you're using a modem, this is determined by the speed of the modem.

C -- Modem Type. Identify the type of modem, so TeleSniffer can send appropriate commands to the modem.

Watch out: A number of manufacturers use the phrase “Hayes compatible” to describe modems whose command structure is generally similar to the one used by Hayes. Nevertheless, some of these modems differ significantly from what the TeleSniffer software expects. Such allegedly compatible modems may not work correctly with TeleSniffer.

D -- System Type. Identify the type of processor this machine is. On a host analyzer, specify “Compaq 286.”

E -- Display Type. Specify whether you have a color display or not. Your answer here affects only the display of TeleSniffer control screens, and not the display of Sniffer screens.

F -- Menu Colors. This affects only the way TeleSniffer displays its own menus on this machine.

Note that Sniffer analyzer screens transmitted from the host to the remote PC are not affected by the setting of options E or F, either at the host or at the remote PC. The attributes of a Sniffer display are controlled solely by the settings in the Sniffer analyzer’s menus or startup parameters. Each Sniffer screen is transmitted from host to remote PC with exactly the same attributes (color, intensity, blink, etc.) it had on the Sniffer analyzer’s own display. When you’re using a remote PC to look at the Sniffer analyzer, it’s important to set the Sniffer analyzer’s attributes to something the remote PC can interpret. However, that’s done in the Sniffer analyzer’s own menus, not by your response to option E or F.

G -- Default directory. Specify the default directory in which TSHOST will look for the source of files exported from the host analyzer or the destination of files imported to the host analyzer by the file transfer module.

Option G is a fill-in item. When you press G, it opens a window in which you write the path to the default directory (for example, C:\TELESNIFF\HOST). When you’ve written your answer, press **enter**.

Exit options. Don’t exit from the menu until you’ve also set options in the submenu. You bring up a submenu by entering the number 1 or 3.

When you’ve taken care of the submenus and are ready to exit HOSTINST, X records everything you’ve done, while Q simply quits and leaves things as they were before you started.

Additional Parameters Affecting the Host

Submenu 1, **optional configuration parameters**, permits you to describe some additional attributes of the host. (The top half of the menu is essentially the same for the remote PC.)

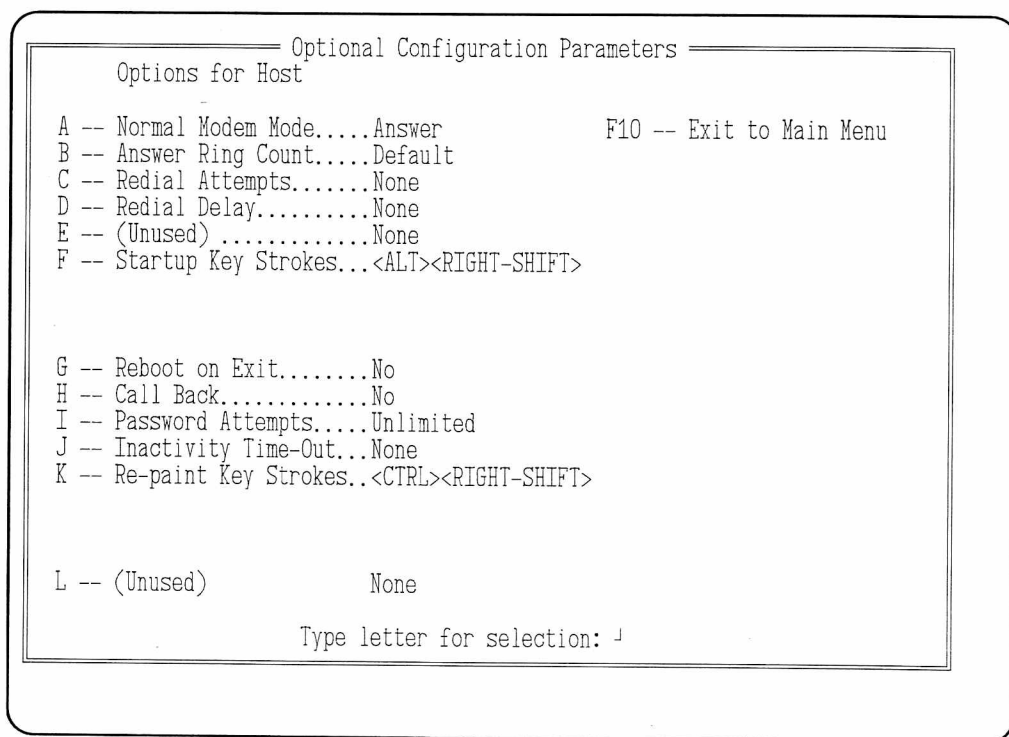


Figure 4. HOSTINST's submenu 1, Optional configuration parameters.

The available menu options are:

A -- Normal modem mode. Should the host accept an incoming call? The setting must be **answer** if the remote PC is to get through.

B -- Answer ring count. When receiving an incoming call, how quickly should the host analyzer answer the phone?

The default is after **1** ring. You can set a higher number, anywhere from **2** to **31**. Obviously, a higher value takes more time. Some people set a high value because the equipment requires it or as a security measure to avoid answering wrong numbers or random dialers.

C -- Redial Attempts. When placing an outgoing call (as part of the call back security feature, **option H**), should the host try again if the call does not get through (for example, because the called machine is busy) and, if so, how many times? The default is **0** ("don't try again"), and the maximum you can set is **99** retries.

D -- Redial delay. If your answer to **C** was greater than **0**, how many seconds should the host analyzer wait before redialing? The minimum (marked **None**) is **5** seconds. The maximum you can set is **90** seconds.

E -- Unused. Not used in the submenu.

F -- Startup Key Strokes. Select the keystrokes which form the TeleSniffer escape sequence.

After TSHOST has been started and a link with a remote PC has been terminated, TSHOST stays resident (while the Sniffer analyzer is doing something else, i.e., Sniffing). At this point, pressing the TeleSniffer escape sequence brings up the **TeleSniffer control screen**. (When there's a remote PC signed on to the host Sniffer analyzer, the **TeleSniffer control screen** is displayed at both machines.)

The choices for your machine's TeleSniffer escape sequence are:

- <Alt><Right-Shift>
- <Alt><Left-Shift>
- <Ctrl><Alt>
- <Left-Shift><Right-Shift>
- <Ctrl><Left-Shift>

G -- Reboot on exit. When a call from a remote PC terminates, should the host Sniffer analyzer reboot? The default is No. That's the setting we recommend.

The possible advantage of rebooting is that you are, thereby, assured that even if the remote user did something that left the host Sniffer analyzer in some undesirable state, the effect is not lasting since the host reboots. The disadvantage is that you may not wish to lose continuity of a Sniffer session.

H -- Call back. If the host analyzer's password table requires it to call back to verify an incoming call, this must be set to yes. Otherwise, it is not needed and may remain at no.

I -- Password Attempts. When the host receives a call from a remote PC and the remote PC fails to supply a valid password, should the host hang up? Or should it permit the remote PC to try again? And if so, how many times? The default is **unlimited**. You may leave it that way, or set it to any number from 0 to 15 additional attempts.

J -- Inactivity Time-Out. When a remote PC is connected to the host, but is neither receiving displays from the host nor sending any other commands, should the host hang up the line? And if so, after how long an interval of inactivity?

The default is **none** (meaning "Take no action to disconnect"). You may leave it that way or select any number of minutes of inactivity from 0 to 15.

K -- Re-paint Key Strokes. When the screen display has been interrupted (for example, by superimposing the TeleSniffer control screen when the Sniffer analyzer was generating a Sniffer display), the previous image may have been contaminated or destroyed. Pressing the repaint escape sequence (at either host or remote) causes the host analyzer to retransmit the current host screen to the remote PC.

The choices for your machine's repaint escape sequence are:

```
<Ctrl><Right-Shift>
<Ctrl><Left-Shift>
<Alt><Left-Shift>
<Ctrl><Alt>
<Left-Shift><Right-Shift>
```

However, you shouldn't make the repaint escape the same as the TeleSniffer escape (option F).

L -- Unused. Not used in the submenu.

The Host's Password Table

On a Sniffer analyzer that will play the role of host, you must set up a table of passwords that the host will accept by pressing **3** in the **HOSTINST main menu**. For each password, you may specify the number to which the host will call back (if you selected the Call Back option on **submenu 1, optional configuration parameters**) and the level of access to the file transfer facility that you grant to the remote user who sends that password.

PASSWORD TABLE		
(A)Add (D)Del (Home)1stPg (End)LastPg (PgUp)PrevPg (PgDn)NextPg (F10)Menu		
01. TS	#:	Opts:TSDOS
02. QUIMOUNESA	#:	Opts:TSDOS
03. LIMON	#:415 555 4301	Opts:TSDOS
04. MELOCOTON	#:	Opts:LTD TSDOS
05. UVA	#:	Opts:No TSDOS
06.	#:	Opts:
07.	#:	Opts:
08.	#:	Opts:
09.	#:	Opts:
10.	#:	Opts:
11.	#:	Opts:
12.	#:	Opts:
13.	#:	Opts:
14.	#:	Opts:
15.	#:	Opts:
16.	#:	Opts:
17.	#:	Opts:
18.	#:	Opts:
19.	#:	Opts:
20.	#:	Opts:
Type letter for selection: J		

Figure 5. Password Table for a host Sniffer.

Passwords

In the first column of the **password table**, you list the set of passwords which the host Sniffer analyzer will accept. You may specify up to 64 different passwords. To add a password, select **A** from the **password table**, and press **enter**. The password will be added to the end of the list. To delete a password, select **D**. You will be prompted to enter the number of the password you want to delete.

Call Back Numbers

In the second column of the **password table**, you list the telephone number which TeleSniffer will dial upon receiving an incoming call and verifying the password of the caller.

Levels of Access

In the third column and after the **Opts:** headings, you indicate which of three levels of access you grant to the remote user who signs on with that password. These levels affect the remote user's access to TSDOS. TSDOS is used in TeleSniffer's file-transfer facility. It is called TSDOS because its commands and conventions are designed to look like those of DOS. For example, it uses commands such as DIR to request a directory list, COPY to transfer a file, and so on. (See the section entitled "Transferring Files to and from the Host Sniffer" for more information on file transfer and on TSDOS.)

The possible levels are:

tsdos

The remote user has full use of TSDOS.

ltd tsdos

The remote user can use TSDOS but has access to files on the host machine only in the host's current directory. The remote user cannot change the host's current directory and cannot delete, rename, or overwrite an existing file.

NO tsdos

The remote user cannot use TSDOS and, hence, cannot transfer files between host and remote PC.

Arrange How TSHOST Will Start

There are two ways to start TSHOST:

- Automatically, every time you turn on power to the host Sniffer analyzer (or reset it).

When you choose automatic start, TSHOST remains resident, waiting for an incoming call (or the TeleSniffer escape sequence from the keyboard). While it waits, the host Sniffer analyzer can go about its business. However, it ties up about 46k bytes of main memory, whether or not a call comes in for it.

- Manually, as needed. When you want the Sniffer analyzer to be ready to play its role as host, you start it. You can do so either at the DOS prompt, by executing TSHOST, or by highlighting **TeleSniffer host** in the **main selection menu** (see Figure 9). Either way, once started, TSHOST remains resident until the Sniffer analyzer is reset or its power turned off.

Setting Up for Automatic Start

To have TSHOST start every time you start or reset the Sniffer analyzer,

Edit the file C:\AUTOEXEC.BAT to insert the statement

TSHOST

ahead of the last line (which says menu).

Set the Sniffer's Display so the Remote PC Can Read It

When you select display attributes for the Sniffer analyzer (in the Sniffer analyzer's **main selection menu**), you are thereby making the choice for the remote PC also.⁷ When you expect a remote PC to be dialling in to your Sniffer analyzer, as far as possible you should select display options for the Sniffer analyzer which also make sense on the screen of the remote PC. TeleSniffer transmits characters from the host Sniffer analyzer's screen to the remote PC just as they are on the host machine, including all their attributes (color, intensity, blink, reversal, etc.).

7

The settings display options in HOSTINST'S menus refer only to display of TeleSniffer's own menus, not to the way it displays anything else.

4. Setting Up the Remote PC

Chapter 4. Setting Up the Remote PC

This chapter describes what you have to do to install the hardware and software that a remote PC will need so that it can call a host Sniffer network analyzer.

Connecting the Modem to the Serial Port

Install a modem which operates at the same rate as the one you've installed on the host Sniffer analyzer. Attach it to an available serial port on the remote PC.

The cables required vary, depending on the PC and the modem. Machines of the PC and XT type usually have DB-25 connectors for the serial port, while machines of the AT type usually have DB-9 connectors.

Install Software for the Remote PC

Use the diskette you created earlier, containing files copied from the Sniffer analyzer's directory C:\TELESNIF\REMOTE.

- On a remote PC with a hard disk, create a directory called \TELESNIF\REMOTE. Copy into it the TeleSniffer files that you earlier copied from the Sniffer analyzer to a diskette.
- For a remote PC without a hard disk, insert the diskette.

Configure TeleSniffer on the Remote PC

Before you can run TSREMOTE on the remote PC, you have to create a configuration file. It contains the values of various parameters that TSREMOTE needs when it runs. To create or revise the configuration file, you run a program called REMINST. When the existing configuration file is appropriate, you don't have to run REMINST again. However, you must set the configuration before you start TSREMOTE for the first time.

If you've installed the TSREMOTE software in a directory on the remote PC's hard disk, REMINST writes the configuration file in the same directory. If you don't have a hard disk and run from a diskette, REMINST writes the configuration file on the same diskette. When the existing configuration file contains appropriate settings, you don't have to run REMINST again.

Among other things, running REMINST permits you to tell TeleSniffer:

- The type of modem you've installed and other characteristics of your communication link. It's important that the two modems match, i.e., use the same speed, the same data encoding parameters, and so on.

- The phone number of each of the Sniffer analyzers you may call, so TSREMOTE can place a call to it. You may also include, if you wish, the password that the host Sniffer analyzer will expect. If you don't include a password in the table, TSREMOTE prompts you to supply a password each time you place a call.
- The startup keystrokes for bringing up the TeleSniffer control screen.

REMINST's Main Menu

When you run REMINST, it starts by putting up its **main menu** (Figure 6). The menu is almost identical to the one displayed by HOSTINST, but the description is repeated here so you don't have to leaf back and forth to find it. In REMINST's **main menu**, you can set the values of several parameters. Before you leave it, you should elicit in turn each of its two submenus, labeled 1 and 2. The submenus are:

1 -- Optional configuration parameters. Settings for the machine on which you are running REMINST.

2 -- Call table. Host phone numbers and passwords for a machine that will play the role of remote PC and will connect to a Sniffer analyzer by telephone.

```
TeleSniffer Remote Parameters, V1.00

GENERAL PARAMETERS                                EXIT OPTIONS
A -- Com Port Address.....CON2                    Q -- Quit, changes not saved
B -- Baud Rate.....2400                            X -- eXit, changes saved
C -- Modem Type.....Hayes
D -- System Type.....IBM Compatible
E -- Display Type.....Monochrome
F -- Menu Colors.....White on Black
G -- Default Directory.....C:\TELESNIF\REMOTE

MENU LIST

1 -- Optional Configuration Parameters
2 -- Call Table Maintenance

Type letter for selection: 1
```

Figure 6. REMINST's main menu.

Choices in REMINST's Main Menu

In setting a value for each of the options **A** to **G**, you're telling TeleSniffer how the remote PC is equipped. Options **B** and **C**, the baud rate and the modem type, must be compatible with the equipment and options of the host Sniffer analyzer.

The options **A** to **F** are multiple choice items. Each time you press one of the letters **A**, **B**, **C**, **D**, **E**, or **F**, the display shows another possible value for that item. Pressing a letter repeatedly thus steps you through all the possible settings. Keep pressing until you see the appropriate one.

The available menu options are:

A -- Com port address. Determine where the remote PC's communications port is configured (COM1, COM2, etc.).

B -- Baud rate. Specify the speed with which TeleSniffer should supply data to the serial port. When you're using a modem, this is determined by the speed of the modem.

C -- Modem type. Identify the type of modem, so TeleSniffer can send appropriate commands to the modem.

Watch out: A number of manufacturers use the phrase "Hayes compatible" to describe modems whose command structure is generally similar to the one used by Hayes. Nevertheless, some of these modems differ significantly from what the TeleSniffer software expects. Such allegedly compatible modems may not work correctly with TeleSniffer.

D -- System type. Identify the type of processor this machine is. If you're using a Sniffer as the remote PC, specify "Compaq 286."

E -- Display type. Specify whether you have a color display or not. Your answer here affects only the display of TeleSniffer menus and not the display of Sniffer screens.

F -- Menu colors. This affects only the way TeleSniffer displays its own menus on the remote PC.

Note that Sniffer screens transmitted from the host are not affected by the setting of options **E** or **F**, either at the host or at the remote PC. The attributes of a Sniffer display are controlled solely by the settings in the host Sniffer analyzer's menus or startup parameters. Each Sniffer screen is transmitted from host to remote PC with exactly the same attributes (color, intensity, blink, etc.) it had on the Sniffer analyzer's own display. When you're using a remote PC to look at the Sniffer analyzer, it's important to set the Sniffer analyzer's display attributes to something the remote PC can interpret. However, that's done in the Sniffer analyzer's own menus, not by your response to option **E** or **F**.

G -- Default directory. Specify the default directory in which TSREMOTE will look for the source of files exported to the host analyzer, or the destination of files imported from the host analyzer by the file transfer module.

Option G is a fill-in item. When you press **G**, it opens a window in which you write the path to the default directory (for example, C:\TELESNIFF\REMOTE). When you've written your answer, press **enter**.

Exit options. Don't exit from the menu until you've also set options in the submenus. You bring up a submenu by entering the number **1** or **2**.

When you've taken care of the submenus and are ready to exit REMINST, type **X** to record everything you've done and **Q** to simply quit, leaving things as they were before you started.

Additional Parameters Affecting the Remote PC

Submenu 1, Optional configuration parameters, permits you to describe some additional attributes of the remote PC.

```
Optional Configuration Parameters
Options for Remote

A -- Normal Modem Mode.....Answer          F10 -- Exit to Main Menu
B -- Answer Ring Count.....Default
C -- Redial Attempts.....None
D -- Redial Delay.....None
E (Unused).....None
F -- Startup Key Strokes...<ALT><RIGHT-SHIFT>

G (Unused)          None
H (Unused)          None
I (Unused)          Unlimited
J (Unused)          None
K (Unused)          <CTRL><RIGHT-SHIFT>

L (Unused)          None

Type letter for selection: ^
```

Figure 7. REMINST's submenu 1, Optional configuration parameters.

The available menu options are:

A -- Normal modem mode. Should the remote PC accept an incoming call?

This setting must be **answer** when the host uses the **call back security** feature. When the host analyzer receives an incoming call and password, it hangs up the phone line and places a call back to the remote PC. This assures that the caller not only has the password but is phoning from the place that the host analyzer expects.

B -- Answer ring count. When receiving an incoming call, how quickly should the remote PC answer the phone?

The default is after **1** ring. You can set a higher number, anywhere from **2** to **31**. Obviously, a higher value takes more time. Some people set a high value either because the equipment requires it or as a security measure to avoid answering wrong numbers or random dialers.

C -- Redial attempts. When placing a call to host analyzer, should the remote PC try again if the call does not get through (for example, because the host analyzer is busy), and if so how many times? The default is **0** (don't try again), and the maximum you can set is **99** retries.

D -- Redial delay. If your answer to **C** was greater than **0**, how many seconds should the host wait before redialing? The minimum (marked **none**) is **5** seconds. The maximum you can set is **90** seconds.

E -- Unused. Not used in the submenu.

F -- Startup key strokes. Select the keystrokes which form the TeleSniffer escape sequence.

After a link is established, pressing the TeleSniffer escape sequence brings up the TeleSniffer control screen while TSREMOTE is displaying screens generated by the host analyzer. (The control screen appears at both the remote PC and the host Sniffer analyzer.)

The choices for the remote PC's TeleSniffer escape sequence are:

- <Alt><Right-Shift>
- <Alt><Left-Shift>
- <Ctrl><Alt>
- <Left-Shift><Right-Shift>
- <Ctrl><Left-Shift>

G to L -- Unused. Not used in the submenu.

The Remote PC's Call Table

Fill in the call table by pressing **2**, **call table maintenance**, in the **main REMINST** menu. The call table provides a convenient way to store frequently-dialed numbers and their associated passwords. If you do enter a name, a phone number, and a password, both the phone number and the password will automatically sent to the host station when you select the appropriate name. It isn't necessary to set up a call table; you can always key in the number to be dialed, regardless of what's in the table.

CALL TABLE MAINTENANCE

Use Arrow Keys, Pg Up, Pg Dn, Home & End to Position Field Pointer
To Edit a Field enter a character, Ins, Del or F1

FUNCTION KEYS

F1 -- Edit Current Field
F3 -- Delete Current Line Entry
F5 - unused
F9 -- Help

F2 -- Insert Line
F4 -- Sort Entries by Name
F10 - Exit to Main Menu

Name	Telephone Number	Password to Send
CALLMEBACK	555-7890	MELOCOTON
HQ	7, 555-7890	UVA
TEST	555-7890	

Figure 8. Call Table Maintenance submenu for a remote PC.

The call table has three fields, as follows:

- | | |
|-----------------|---|
| Name | An arbitrary mnemonic, serving as a label or reminder to the user. The name must not start with a number (since TSREMOTE would then be unable to distinguish it from a phone number). |
| Number | The number to be called. Insert a comma to indicate a pause (for example, after dialing 9 for an outside line). Use the letter P before the number to indicate pulse rather than tone dialing. |
| Password | The password to supply to the host analyzer. If you write a password in this field, TSREMOTE automatically transmits it to the host analyzer when it places a call. If you leave the field blank, TSREMOTE prompts you to type a password each time you call. |

A submenu provides options for maintaining the **call table**. Use the arrow keys and the **page up**, **page down**, **home**, and **end** keys to move the cursor around the table.

For routine maintenance procedures, the available function key options are:

F1 -- Edit current field. Selects a field for editing. Use the **delete** key to delete a character, the **insert** key to insert spaces between characters, and the right or left arrow key to move the cursor a single position in the field. Press **enter** when finished editing a field.

F2 -- Insert line. Inserts a line on the screen, and moves the line you are on and all the lines below it down one line.

F3 -- Delete current line entry. Deletes the line you are on, and moves the line below it up one line.

F4 -- Sort entries by name. Sorts the names alphabetically and automatically upon return to the **Optional configuration parameters** menu.

F5 -- Unused. Not used in the submenu.

F9 -- Help. Displays further information on the use of the functions keys.

F10 -- Exit to main menu. Returns to the **Optional configuration parameters** menu

5. Starting tshost from a Host Sniffer Analyzer

Chapter 5. Starting TSHOST from a Host Sniffer Analyzer

This chapter describes how you start TeleSniffer from the host Sniffer analyzer so that it is ready to accept calls from a remote PC. (The chapter assumes that TeleSniffer has already been installed and configured, as described in "Setting Up the Host analyzer" above.)

Automatic Start

When the TSHOST statement has been included in the AUTOEXEC.BAT file, there is nothing to do. TSHOST is always running whenever the machine is running (or at least whenever it has been booted from the hard disk).

Start on Demand

This is something you do on a machine where TSHOST is not in AUTOEXEC.BAT and so does not start automatically each time you start or reset the machine.

Go to the Sniffer selection menu. If you're already running the Sniffer analyzer, you must first press **F5** to return to the main menu and then select Exit from that menu.

In the **main selection menu**, highlight TeleSniffer, and press **enter**. Then, in the TeleSniffer selection menu, choose **start host** and press **enter** (see Figure 9).

Alternatively, if you exit to DOS, type from the DOS prompt:

TSHOST

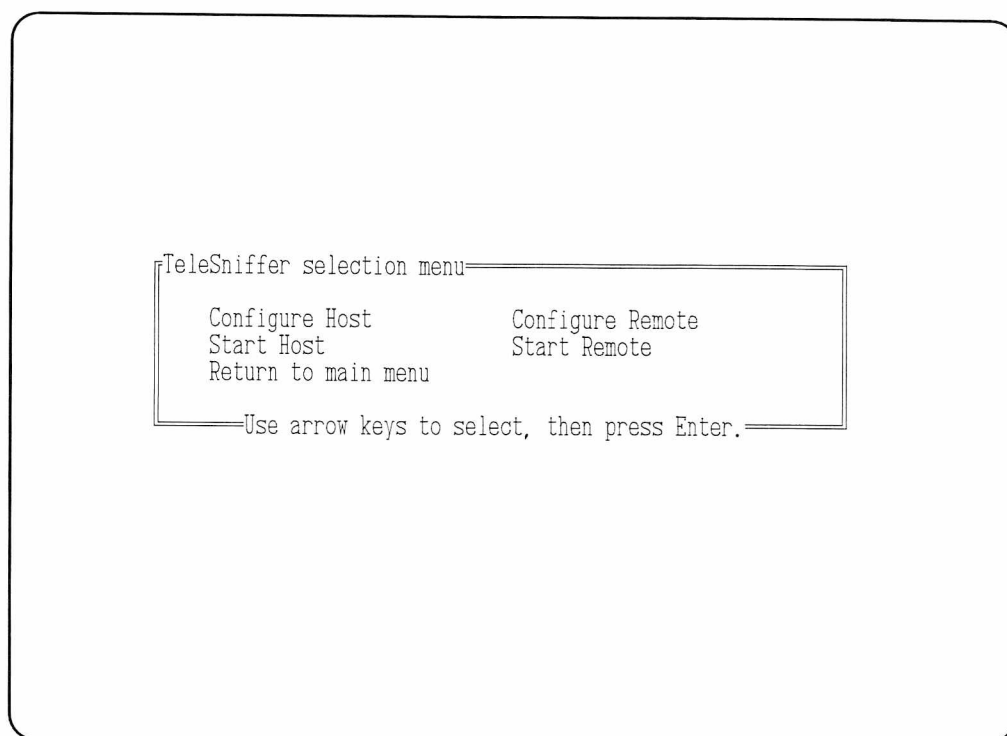


Figure 9. Starting a single TeleSniffer Host session on the host Sniffer.

TSHOST Remains Resident

Once TSHOST has started (whether automatically, in response to a command included in the AUTOEXEC.BAT file, or in response to your specific request), it sets aside a portion of memory and remains resident. It does nothing further until it is awakened by either of the following:

- A phone call arriving at the modem connected to the host Sniffer analyzer's serial port, COM1.
- The TeleSniffer escape sequence typed from the keyboard. The escape sequence is <Alt><Right-Shift>, unless you set it to something else while running HOSTINST.

Response to an Incoming Call

When the host analyzer receives a call, there is no visible sign at its screen. If another program is running (for example, the Sniffer analyzer is Sniffing), that activity continues uninterrupted.

If the connection is successful, the remote PC starts to see the image displayed on the host analyzer's screen.

If the operator of the remote PC presses keys on the remote keyboard, what the remote operator types appears on the host Sniffer analyzer's screen as though typed by the host operator.

Invoking the TeleSniffer Control Screen

Once TSHOST has been started, typing the TeleSniffer escape sequence brings up the TeleSniffer control screen with a set of three windows, including one with the **TeleSniffer main menu**. (The sequence is **<Alt><Right-Shift>**, unless you've set it to one of the other optional values.)

Before a remote PC is connected to the host analyzer, you see a screen like the one shown in Figure 10 with the message, **No Data Link Established**, visible in the bottom left window.

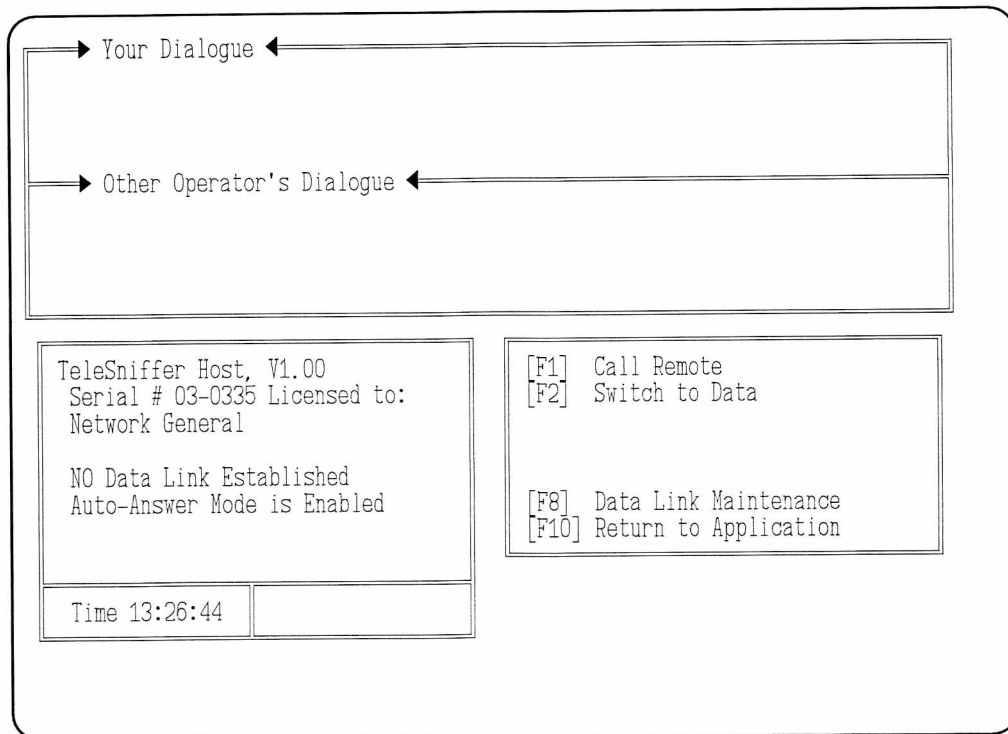


Figure 10. Control screen displayed on the host Sniffer analyzer and before the machines are connected.

However, after a remote PC is connected to the host analyzer, the two windows at the bottom of the screen look like those shown in Figure 11 with the message, **Data Link Established**, in the bottom left window.

Since the displays of the two machines are linked, the remote PC user sees similar TeleSniffer screens. Indeed, once the connection has been established, only menu item **F5, file transfer packages** (compare the menus in the lower right windows of Figures 11 and 14), is unavailable on the host machine.

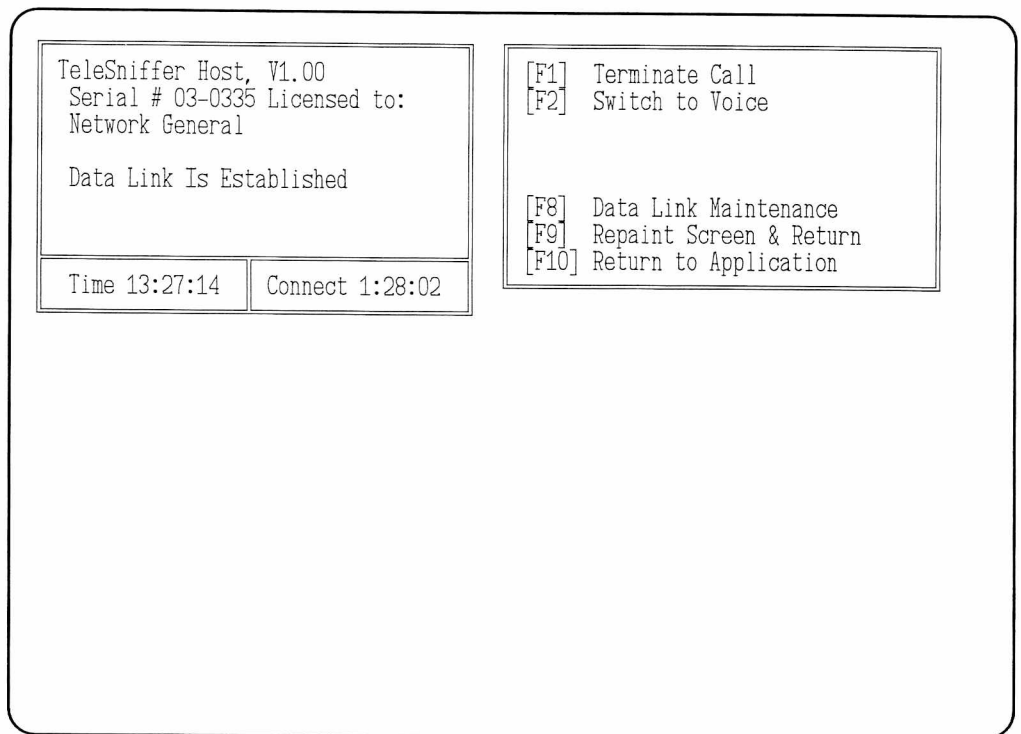


Figure 11. Two bottom windows of the control screen displayed after successful connection to the host analyzer.

6. Starting tsremote from a Remote PC

Chapter 6. Starting TSREMOTE from a Remote PC

This chapter describes how you use a PC or a Sniffer analyzer as a remote station connected to a host analyzer. The program is called TSREMOTE. The program refers to a configuration file, which must exist before you execute TSREMOTE. If you haven't got one, run REMINST before you try to run TSREMOTE. (See "Setting Up the Remote PC" above.)

Move to the drive and/or directory which contains TSREMOTE. (This varies, depending on the machine you are using and the way you have installed TSREMOTE.) From the DOS prompt, type

TSREMOTE

TSREMOTE brings up the TeleSniffer control screen which shows that the link has not yet been established (see Figure 12). You can see in the bottom left window the message, **NO Data Link Established**.

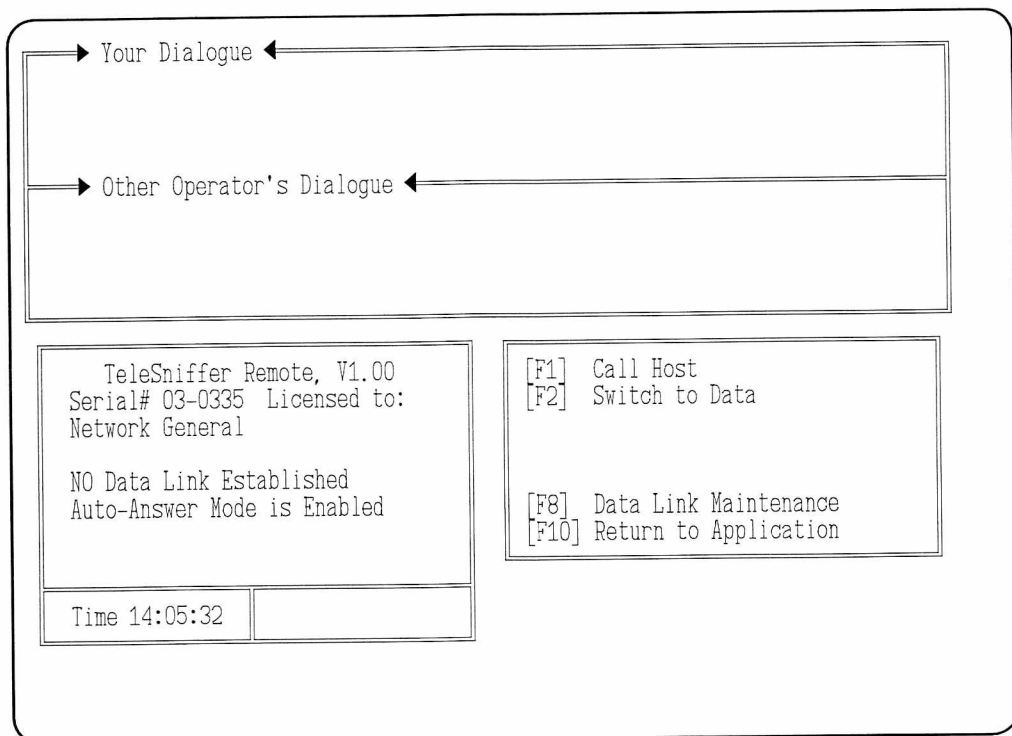


Figure 12. Control screen displayed on the remote PC and before the machines are connected.

If your remote station is a Sniffer analyzer, you can start TSREMOTE from the **main selection menu**. In the **selection menu**, highlight **TeleSniffer remote**, and press **enter** (see Figure 9).

Call the Host Sniffer

To place a call to the host analyzer, press **F1**. This opens two windows (see Figure 13). The one at the left shows the names entered in your call table (recorded by your earlier use of REMINST). You can select one of them by pressing the up or down arrow to highlight to the one you want. To call the highlighted name, press **enter**.

Alternatively, before pressing **enter**, you may type a telephone number from the keyboard. What you type appears in the window at bottom right. If you have typed anything there, TSREMOTE ignores the highlighting at the left and, instead, instructs the modem to dial the number you typed when you press **enter**.

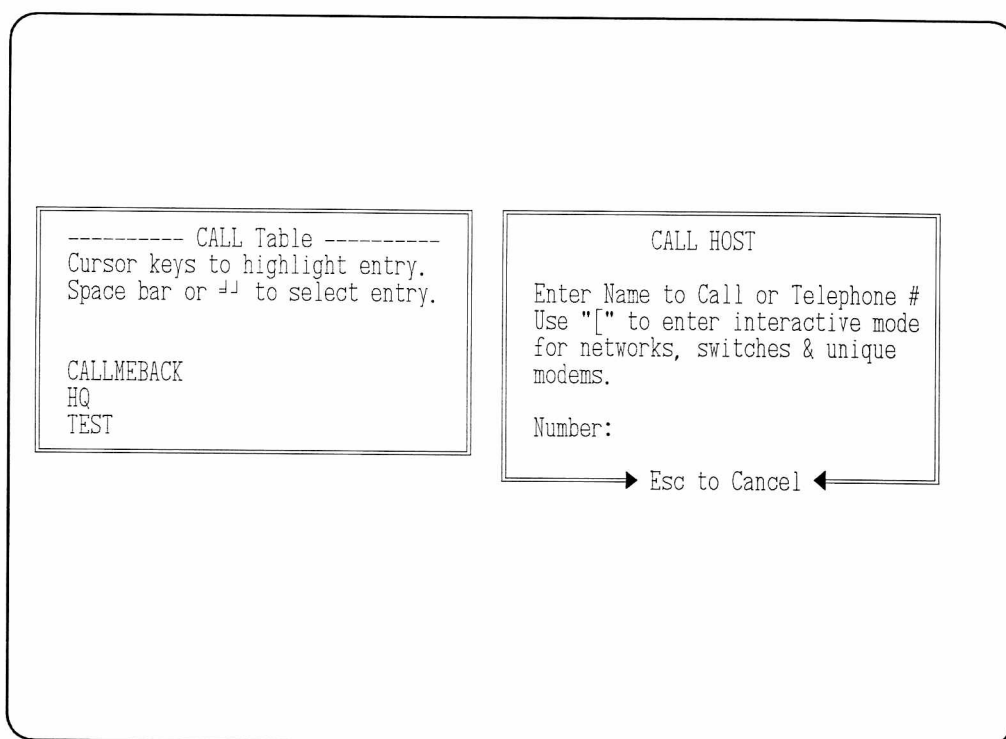


Figure 13. Two windows opened for selecting names from the call table or for typing a telephone number.

The Host Sniffer Analyzer Checks the Connection

If you place your call by highlighting a name from the **call table** and if its entry in the **call table** included a password, TSREMOTE sends your password to the host.

But if you type the number yourself or if the **call table** provides no password, TSREMOTE next prompts you for a password. What you type is not displayed but is sent to the host when you press **enter**.

In the case where the password you type is not in the **password table** of the host, you must strike the **enter** key five or six times and enter the password again.

Connection?

If you do not see a screen transmitted from the host (but instead continue to see **NO Data Link Established**), you may want to press **F1** to try again or **F8** to try to troubleshoot the data link. See "Troubleshooting Tips" at the end of this manual. A common cause for a problem is a mismatch in speed between the two modems or the REMINST baud rate parameters at the two ends.

Connection!

If the host accepts your password, you are connected to the host analyzer without further ado. The procedure takes a bit longer if the host analyzer must call you back. The next screen you see is similar to the host's screen, and the lower left window displays the message, **Data Link Is Established** (compare Figures 11 and 14). **F5, File Transfer Package**, appears only on the remote user's menu, and access is available only if authorized.

Your next keystroke is transmitted to the host, just as it would be if you were in fact seated at the host machine.

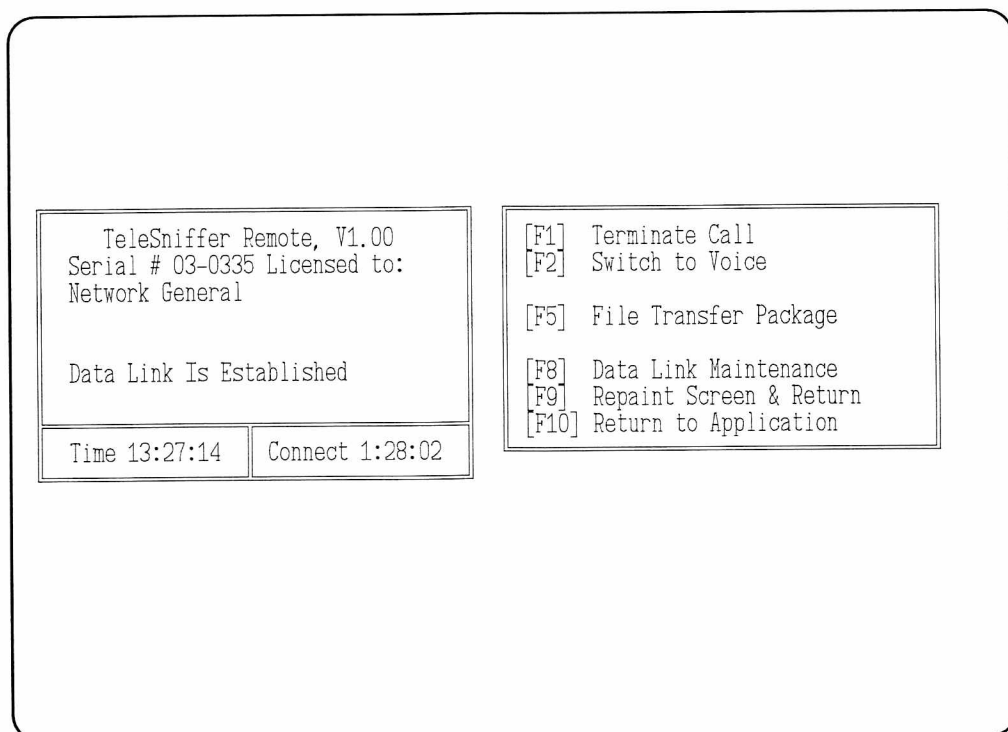


Figure 14. Two bottom windows displayed after successful connection from a remote station.

7. Using the TeleSniffer Control Screen

Chapter 7. Using the TeleSniffer Control Screen

Once the link between remote and host has been established, both machines see essentially the same screen. Ordinarily, it is governed by whatever the host Sniffer is doing.

However, the operator at either machine can invoke the TeleSniffer control screen by keying the TeleSniffer escape sequence (i.e., <Alt><Right-Shift>, unless you've elected a different option). When either operator keys that sequence, the current display is replaced by the TeleSniffer control screen at both machines. This chapter describes each function key in the main TeleSniffer menu and the other major uses of the TeleSniffer control screen.

The Main TeleSniffer Menu

As you can see by comparing the menus in the lower right hand windows of Figures 11 and 14, essentially the same layout is used for both host and remote station's versions of the screen.

The available menu choices are as follows:

F1 -- Call host, call remote, or terminate call. When the machine is not connected to a host or to a remote PC, this function key means **call host** or **call remote**. When the machine is connected, this function key means **terminate call**. (For more information on the **call host** function, see the section entitled "Call the Host Sniffer Analyzer" above.)

F2 -- Switch to data or switch to voice. This is relevant only when you are using a modem which has a telephone handset connected to it. When the link is in data mode, the caption is **switch to voice**; when the link is in voice mode, the caption is **switch to data**.

When the machines are connected, pressing **switch to voice** sends a message to the other machine, indicating that the operator has requested voice transmission. When both operators have pressed **F2**, the two screens are frozen (since data is no longer being exchanged) and the two operators may talk. (See the section below entitled "Written and Voice Chats" for additional information.)

F5 -- File transfer package. This key is enabled only for the remote PC, only when the link is in effect, and only when the remote PC is authorized to use it in the host's **password table**. (See section below entitled "Transferring Files to and from the Host Sniffer" for additional information.)

F8 -- Data link maintenance. Brings up a submenu in the screen's lower right quadrant from which either host or remote user may examine the serial port, reset the line, or switch certain options, such as synchronization. (See the following section entitled "Data Link Maintenance" for additional information.)

F9 -- Repaint screen & return. In effect only when the machines are connected. Causes the host analyzer to retransmit its screen image to the remote PC (in case the image there has been garbled by transmission problems). Either side can request this, but usually the request comes from the remote PC (where the need for repainting is evident).

F10 -- Return to application. Discontinues the TeleSniffer screen and menu and returns the machine to what it was doing before.

When the link between the two machines is in effect, pressing **F10** returns them both to the mode in which whatever is displayed on the host analyzer's screen is transmitted to the remote PC. That is, the host returns to whatever it was doing before (for example, Sniffing), and the remote PC returns to observing the host's Sniffing.

Leaving a TeleSniffer Screen or Session

If the **TeleSniffer main menu** is not on the screen, pressing the TeleSniffer escape sequence causes it to re-appear on both the host and the remote machines. From there, you can press **F1** to disconnect from the host or from the remote PC, or you can press **F10** to remove the TeleSniffer control screen and to resume watching what the host analyzer is doing.

If the other machine crashes or hangs, you may find that your own keyboard and display are also frozen, such that the physical link remains in place but that you get no response from the host. As an emergency escape, you may exit to DOS by pressing **<Ctrl><Alt>** while **TSREMOTE** or **TSHOST** remains active on your machine.

Watch out: This exit signal is unusual. In most circumstances, **<Ctrl><Alt>** is the signal for system reset. Better be sure you're really in **TSREMOTE** or **TSHOST** before you use that special key sequence. While it is running, TeleSniffer traps **<Ctrl><Alt>** and, instead, uses it to exit and to return to DOS without issuing a system reset.

Written and Voice "Chats"

To exchange written messages, the two operators have only to type in the topmost window of the TeleSniffer screen (see Figure 15). What each types is immediately displayed (character by character) on both screens. Both can type at the same time; you don't have to take turns. Whether or not you are at a host station or at a remote station, you see what you type in the window labeled **Your Dialogue** and what the other person types in the window labeled **Other operator's dialogue**.

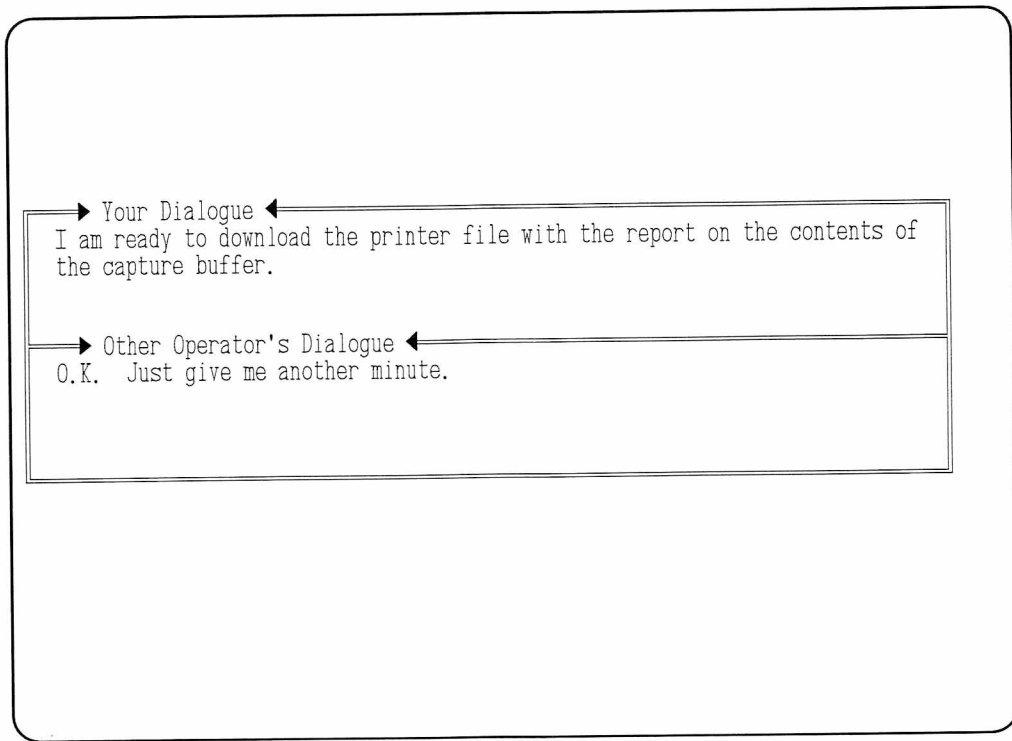


Figure 15. Topmost window of the TeleSniffer control screen used to exchange written messages between a host and a remote station.

If what you have to communicate requires a human voice rather than keystrokes, either operator can press **F2, switch to voice**, to request that the line be used for voice. This presumes that both ends have a telephone handset as well as a modem. The option will not appear if you have a Hayes-compatible modem or if your modem has only a data line connection. When you press **F2**, you see the message shown in Figure 16.

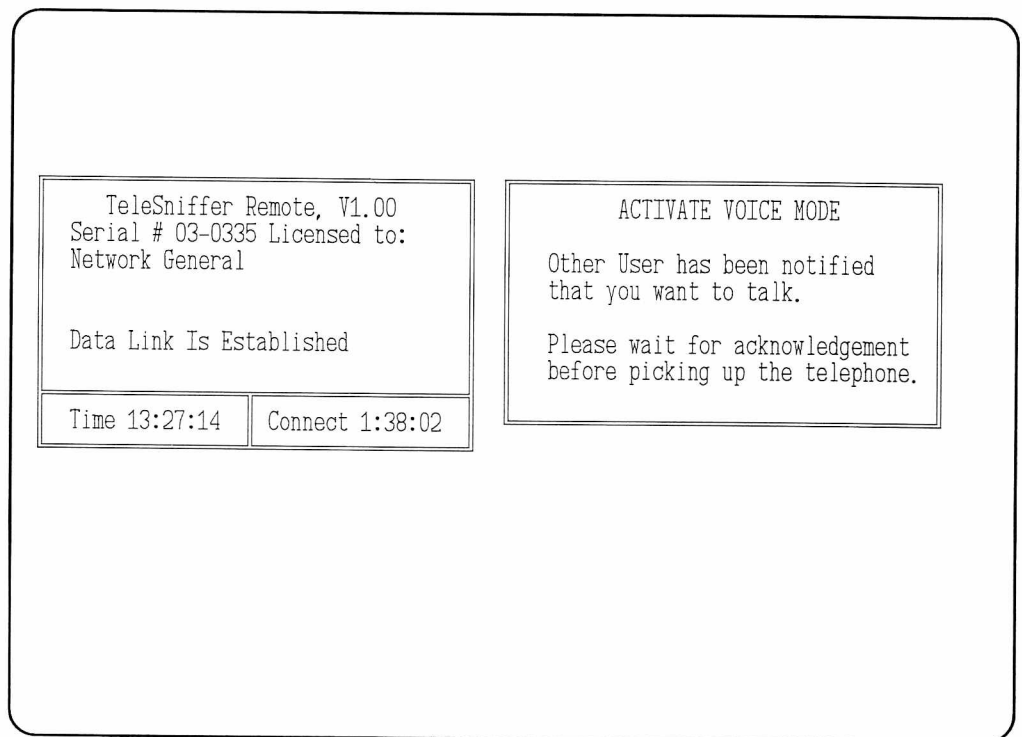


Figure 16. Window shown to user subsequent to selecting F2, switch to voice, on the TeleSniffer main menu.

When you're on the receiving end of such a request, you see the message shown in Figure 17, and you accept the request by pressing **enter** or reject the request by pressing **esc**.

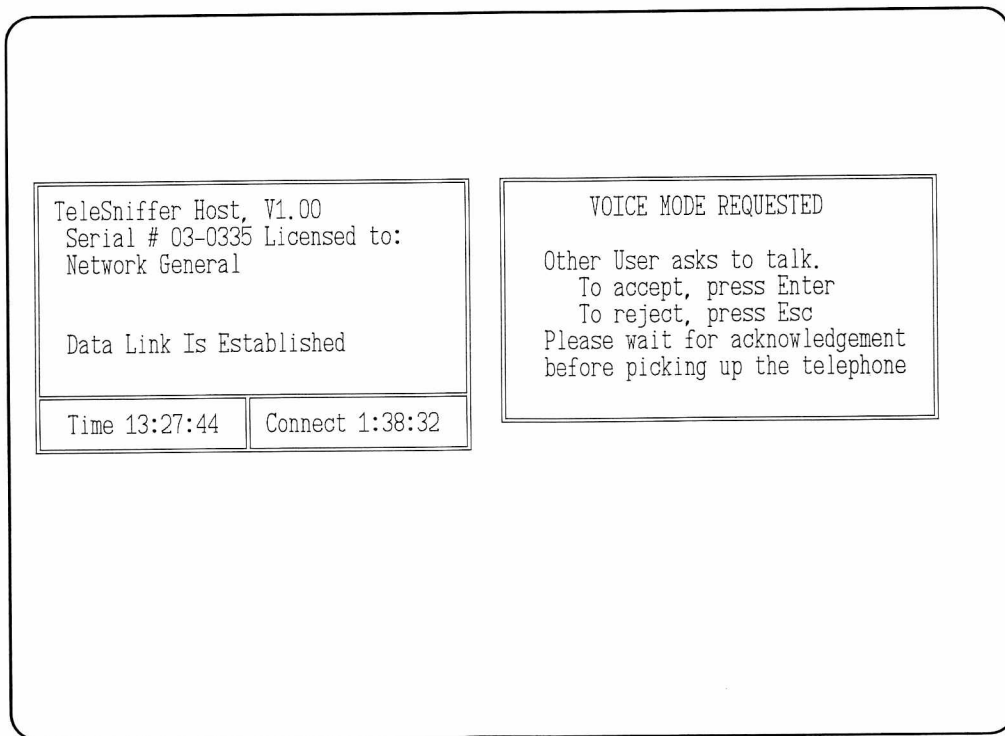


Figure 17. Window shown to user at other station subsequent to selecting F2, switch to voice, on the TeleSniffer main menu.

At either end, you shouldn't pick up the phone until you see the message, **voice mode enabled**. At that point, you pick up the phone and press any key to quiet the modem. TeleSniffer switches the line to **voice mode**.

Once the line is in voice mode, the TeleSniffer menu is frozen. No data can pass in either direction while the line is use for voice. At each end, when you hang up the phone, you press **F2** again to return to data mode and wait until the data link has been re-established before hanging up the telephone.

Data Link Maintenance

While both machines have the **TeleSniffer menu**, either can press **F8** to bring up the **data link maintenance menu**. Only the person who actually pressed **F8** gets to see this menu. The other sees a display showing that the partner is doing datalink maintenance and cannot act until the person who pressed **F8** returns to the **main TeleSniffer menu**.

Maintenance Options

When you request **data link maintenance**, TeleSniffer places a submenu in the lower right window of the screen (see Figure 18).

Some choices toggle between **enable** and **disable** when you press the appropriate function key. A choice is to **disable** if the function is **enabled**, or it is to **enable** if the function is **disabled**.

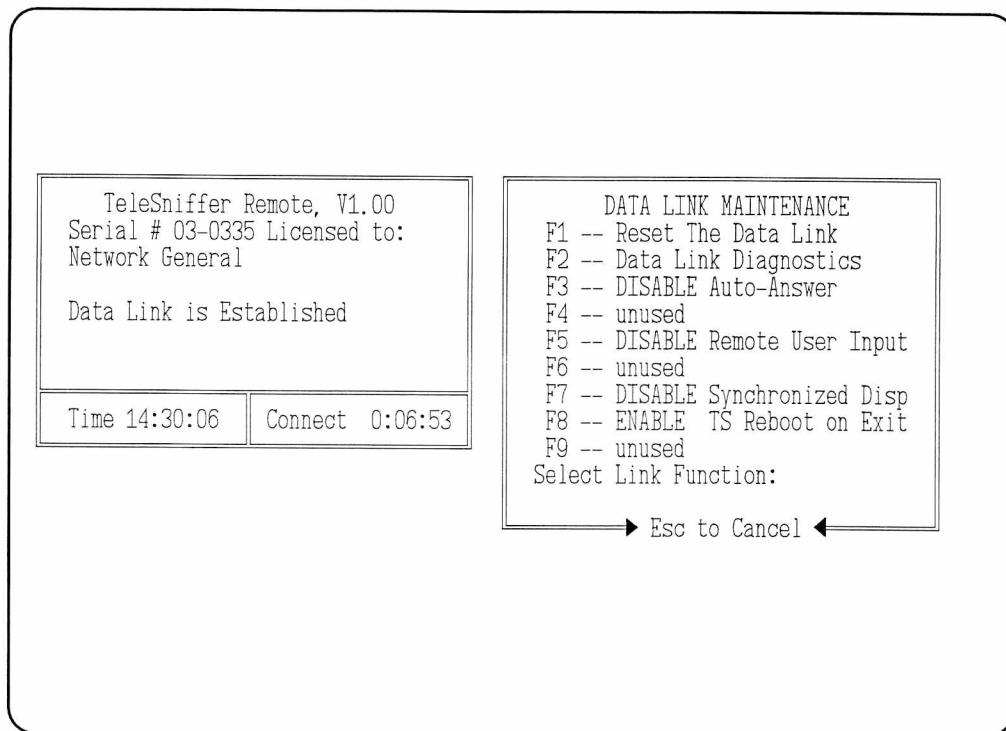


Figure 18. Data link maintenance submenu on the remote PC.

The available menu options are:

F1 -- Reset the data link. That's an engineer's way of saying "Hang up the phone." It disconnects the modem from the phone line.

F2 -- Data link diagnostics. This brings up windows in the bottom half of the screen in which you can see the status of the signals used to maintain communication (see Figure 19). It's useful in diagnosing problems with line or modem. You can set force some of the bits in an effort to get the two ends of the line handshaking properly.

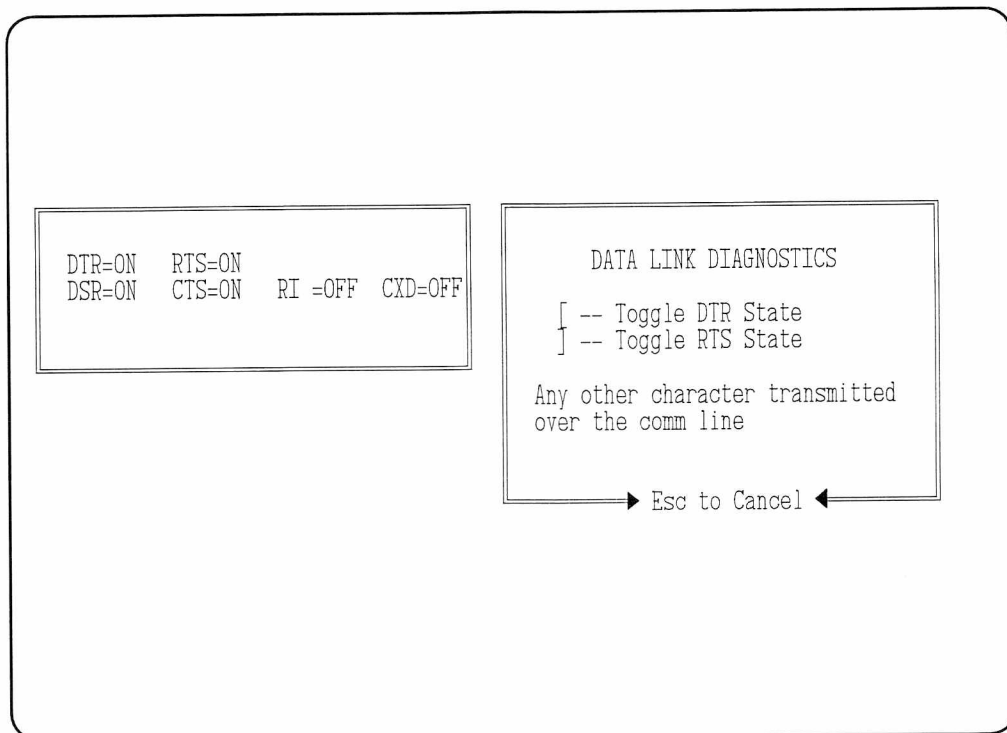


Figure 19. Data link diagnostics windows.

F3 -- Auto-answer. Whether your machine will answer next time it receives an incoming call.

F4 -- Unused or TeleSniffer. On the remote PC's submenu, it is not used. On the host analyzer's submenu, it allows the operator to disallow incoming calls and the use of other communications software.

F5 -- Remote User Input. To make sure the two operators don't trip on each other's input, this permits either side to disable the other's keyboard. The message, **Your keyboard is disabled**, appears on the other's screen. That operator may still continue to use the TeleSniffer control screen but cannot operate the Sniffer analyzer itself.

F6 -- Unused. Not used in the submenu.

F7 -- Synchronized display. When synchronization is enabled, TSHOST makes the host Sniffer wait so that its screen won't get (much) ahead of the display on the remote PC.

Don't use synchronization unless you need it. It forces the host analyzer to slow down. You need synchronization when you can't afford to miss a piece of the display. For example, when you're in the file transfer module and you ask for a directory list, you don't want to risk skipping some unpredictable amount of it.

But if you're watching a real-time display of network activity, you couldn't read all of a continuous display anyway, and having a succession of snapshots is probably preferable.

F8 -- TS reboot on exit. Allows user to reboot once the Telesniffer session has ended.

F9 -- Unused. Not used in the submenu.

Transferring Files to and from the Host Sniffer Analyzer

You can use the file transfer facility from the remote PC while it is connected to a host which has granted permission (TSDOS or LTD TSDOS). To activate file transfer, proceed as follows:

- If your screen is showing the host analyzer's application, press the TeleSniffer escape sequence to bring up the **TeleSniffer main menu**. Doing that causes it to appear both on your screen and on the host's.
- Press **F5**, File transfer package.

On your screen you see what looks like a return to DOS. However, this isn't DOS but TSDOS. You may now use a set of DOS-like commands for file transfer.

When you start TSDOS on the remote PC, the host analyzer's screen displays the legend, **File transfer is active**, in the bottom right window. The host's keyboard is frozen until you exit from **File transfer** on the remote PC.

How TSDOS Distinguishes Host from Remote Drives

To permit you to write DOS-like commands, TSDOS allows the use of some standard DOS command names. (TSDOS intercepts and interprets the commands you type. Then it passes appropriate instructions to the operating systems of the two machines.)

When you're transferring files, you have to be able to talk about two machines:

- the local machine on which you're working,
- and
- the host machine to which you're connected.

TSDOS therefore, introduces the following notation:

In every reference to a drive (for example, your local machine's drive A: or the host analyzer's drive C:), the name of the drive must be preceded by the letter H (for host) or L (for local).

Thus, the command

HC:

means that the TSDOS default drive becomes the host machine's drive C.

File Transfer with the COPY Command

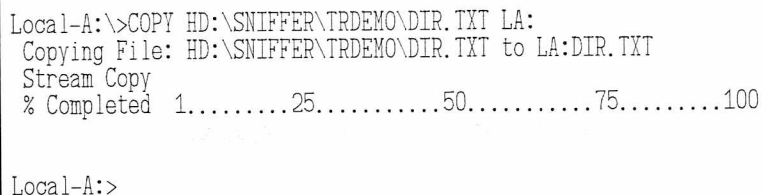
In TSDOS, you use the COPY command for file transfer. The local station may, thereby, get a listing of a file from a host station or may send a file to a host station.

For example, the command

```
COPY HC:\CAPTURE\FRAMES.ENC LB:SAMPLE1.ENC
```

causes TeleSniffer to copy the file C:\CAPTURE\FRAMES.ENC from the host analyzer's C disk, and write it in the current directory of the local machine's B disk, and there name it SAMPLE1.ENC.

During file transfer, you see messages on both stations showing the names of the files being transferred and the percentage of the transfer completed. On the remote PC, the machine from which the transfer is initiated, the message appears after you strike **enter** (see Figure 20).



```
Local-A:\>COPY HD:\SNIFFER\TRDEMO\DIR.TXT LA:
Copying File: HD:\SNIFFER\TRDEMO\DIR.TXT to LA:DIR.TXT
Stream Copy
% Completed 1.....25.....50.....75.....100

Local-A:>
```

Figure 20. Message shown on the remote PC after issuing the TSDOS.COPY command.

On the host machine, you see the message in the top window of the TeleSniffer screen in the Remote operator's dialogue box (see Figure 21).

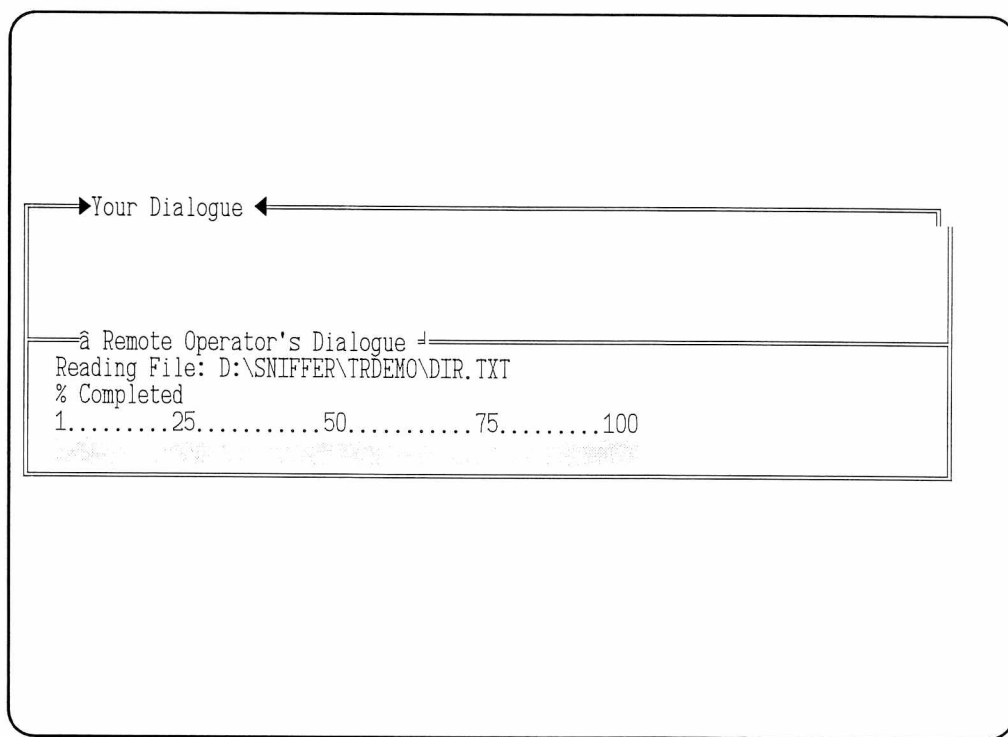


Figure 21. Message shown on the host Sniffer analyzer after the TSDOS COPY command is issued on the local machine.

Transfer Time and File Size with the DIR Command

The DIR command in TSDOS tells you something that the standard DIR command doesn't provide: in addition to reporting the file's size in bytes, it gives you an estimate of the time required to transfer each file that it lists. For example, Figure 22 shows the result of the request,

```
HC:> DIR HC:\ARCHIVE\*.TRD
```

As a result of the request, the names of files having the suffix .TRD in the host's directory C:\ARCHIVE are listed along with size and transfer time.

```

Local-A:\>DIR HD:\SNIFFER\TRDEMO\*. *

Directory of HD:\SNIFFER\TRDEMO\

.                <DIR>
..               <DIR>
STARTUP  TRD      1287   01-27-87   12:00a    0.1m
ADEMO    TRC     13136   01-27-87   12:00a    1.1m
BDEMO    TRC     13394   01-27-87   12:00a    1.1m
MDEMO    TRC      4278   01-27-87   12:00a    0.3m
PDEMO    TRC      4959   01-27-87   12:00a    0.4m
SDEMO    TRC      4667   01-27-87   12:00a    0.4m
TDEMO    TRC      6336   01-27-87   12:00a    0.5m
MDEMO    TRS        262   01-27-87   12:00a    0.0m
BC1000   TRC    205494   04-03-87   07:04a   17.6m
DIR      TXT        593   10-21-87   09:51a    0.0m
12 Files, Containing 254406 Bytes

```

Figure 22. Transfer time and file size as a result of the DIR command.

Summary of TSDOS Commands

The following commands may be used from within TSDOS. Note that you may not execute DOS commands other than those listed here nor run any other executable file, either in the local machine or the host analyzer. (Of course, you are always free to do either of those when you return to the regular operation of TeleSniffer.)

CHDIR, CD	Change the current working directory to the directory you indicate .
COPY	Create a duplicate of the file(s) named in the first argument. The duplicate is written on the drive and with the name indicated in the optional second argument. If the second argument is omitted, the destination drive is the current working drive. Drive names must include the prefix H (host) or L (local).
DELETE, DEL	Delete the file(s) named in the argument.
DIR	List the files in the indicated directory (or in the current directory if no directory is named).
EXIT	Exit TSDOS and return to TeleSniffer control screen.
HELP	Display a summary of TSDOS commands.

HOSTINST	Run the installation and setup procedure for TeleSniffer on the host station.
MKDIR, MD	Create a new directory (or subdirectory).
PROMPT	Toggle on or off display of the current directory in the TSDOS prompt. When on, the directory is displayed, in addition to the drive name (which is always displayed, with the prefix H or L as appropriate).
REMINST	Run the installation and setup procedure for TeleSniffer on the remote station.
RENAME, REN	Rename the specified file. The drive and directory may be omitted from the new name but (whether included or omitted) must be the same for the new name as the old.
TSHOST	Invokes TeleSniffer on the host station.
TRESMOTE	Invokes Telesniffer on the remote PC station.
TYPE	Display the indicated file at the screen.

Appendixes

Appendixes

Appendix A. Troubleshooting Tips

The following possible situations attempt to answer some common queries.

IF A REMOTE PC DOES NOT MATCH THE SPEED OF CHANGES IN THE SNIFFER' ANALYZERS DISPLAY

- Step 1* Suppress the cosmetic visual effects of the Sniffer analyzer when you start it up by including `noscroll` as a command line parameter.
- Step 2* Force the Sniffer analyzer to slow down. One way to accomplish this is to synchronize the remote PC with the Sniffer analyzer. This is the default setting in the **data link maintenance** submenu.
- Step 3* Disable the synchronization option in the **data link maintenance** submenu. One consequence of this is that a remote PC misses some of a Sniffer analyzer's output.

IF THE TELESNIFFER ESCAPE SEQUENCE DOES NOT BRING UP THE TELESNIFFER CONTROL SCREEN

Check the settings selected for both the TeleSniffer escape sequence and the repaint escape sequence in the **optional configuration parameters** submenu, and be certain that they are not the same.

IF THE SCREEN IMAGE IS GARBLED DUE TO TRANSMISSION PROBLEMS

Press **F9, repaint screen** and **return**, on the **main TeleSniffer menu**. The image will be re-transmitted.

IF YOU GET THE WARNING, "WARNING...CTS (CLEAR TO SEND) IS NOT PRESENTLY ASSERTED"

- Step 1.* The message means that the modem is probably not responding correctly. First, check to see that it is turned on.
- Step 2.* If it is not turned on, turn it on and reset the communications line by pressing **F8, data link maintenance**, on the **TeleSniffer main menu** and **F1, reset the data link**, on the **data link maintenance** submenu.
- Step 3.* If the modem is turned on, you may have a hardware problem. Check to see if you have two communications boards assigned to the same interrupt vector or to the

same I/O address. You may change the configuration in the main menus of REMINST and HOSTINST.

IF THE OTHER MACHINE CRASHES OR HANGS

Exit to DOS by pressing <Ctrl><Alt>. Be certain you are running TSREMOTE or TSHOST before issuing this escape sequence, otherwise you may reset your system.

IF YOU DO NOT SEE A SCREEN TRANSMITTED FROM THE HOST STATION AND CONTINUE TO SEE THE MESSAGE, NO DATA LINK ESTABLISHED, AFTER CONNECTION ATTEMPTS

- Step 1.* If you saw the CTS warning error message described in the situation above, then follow the troubleshooting steps outlined for that situation.
- Step 2.* If you did not get that message, press **F1**, **call host**, on the **TeleSniffer main menu**, and try again.
- Step 3.* If problem still persists check to see if the modem you chose in REMINST or in HOSTINST match the modem in use.
- Step 4.* If the modems do match, then press **F8**, **data link maintenance**, on the **TeleSniffer main menu** and **F2**, **data link diagnostics**. In the box in the lower left hand corner of the TeleSniffer control screen, the DTR, RTS, and CTS indicators should read **ON**, and the CXD indicator should read **OFF**.
- Step 5.* If the indicators are not as described in Step 4, one possibility is that you may have two communications ports configured for the same address. Change the configuration in the **main menus** of REMINST and HOSTINST.
- Step 6.* Another possibility is a cabling problem between the communications board and the modem. Check the cabling requirements in the section, "Cable Connections to the Sniffer analyzer's Serial Port," and make the necessary changes.
- Step 7.* You can toggle the DTR indicator light **ON** and **OFF** with "[" if your modem has one. When DTR is **OFF**, the light should be on, and when DTR is **ON**, the light should be off. If you can't do this, the problem may be with either the communications port configuration or with the cabling. Follow the instructions in steps 5 and 6 if you have not tried them.
- Step 8.* Since you use a Hayes or a Hayes-compatible modem, you can type the letters **AT** followed by **enter**. You should see **AT** in the **your dialogue box** and **OK** or **0** in the **remote operator's dialogue box**. If not, the problem may be with either the communications port configuration or with the cabling. Follow the instructions in Steps 5 and 6 if you have not tried them.

Step 9. You can also type the letters ATDT followed by **enter**. You should hear a ringing or buzzing sound from the modem and be able to turn it off by typing **AT** followed by **enter**. If you do not hear ringing or buzzing, you probably have a cabling problem. Follow the instructions in Step 6 if you have not tried them.

Appendix B. Glossary

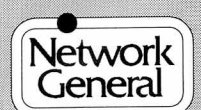
<i>Carbon Copy PLUS</i>	A product developed by Meridian Technology, Inc. and licensed by Network General Corporation to use some of its features as TeleSniffer.
<i>Host Station</i>	A Sniffer analyzer to which is connected a remote PC station (either an IBM, an IBM-compatible, or another Sniffer analyzer) via TeleSniffer. When linked by TeleSniffer, it can then be controlled and operated from the remote PC and used to transfer files, to "chat," and to provide maintenance.
<i>HOSTINST</i>	The installation module for TSHOST. It is used to create or to revise the TeleSniffer configuration file on a host station.
<i>REMINST</i>	The installation module for TSREMOTE. It is used to create or to revise the TeleSniffer configuration file on a remote station.
<i>Remote Station</i>	A PC (an IBM, an IBM-compatible, or another Sniffer analyzer) connected to a Sniffer host station via TeleSniffer. When linked by TeleSniffer, it becomes a remote keyboard and screen for a Sniffer analyzer host .
<i>Sniffer analyzer</i>	Network General Corporation's tool for collecting, analyzing, and interpreting data transmitted in a local area network. Versions exist for use with various types of networks, including Ethernet, token ring, ARCNET, and StarLAN.
<i>TeleSniffer</i>	Software included with the Sniffer network analyzer which permits operation and control of an analyzer from a remote station.
<i>Control Screen</i>	The screen with windows and menus by which a user at either a remote PC or a host Sniffer analyzer uses the available features of TeleSniffer.
<i>TSDOS</i>	A set of DOS-like commands which, if a host station permits, allows a remote station to perform some DOS related functions. It includes the COPY command, a feature used for file transfer.
<i>TSHost</i>	The program which runs a host Sniffer analyzer. Once invoked, it runs in the background of a Sniffer analyzer until called by a remote PC.

TSRemote

The program which runs a remote PC. It calls and then handles communication with a Sniffer analyzer host station.

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